



DID YOU KNOW?

A BRIEF INTRODUCTION TO TMBS® DIODES IN eSMP® SERIES PACKAGES

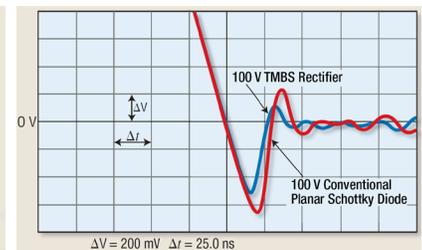
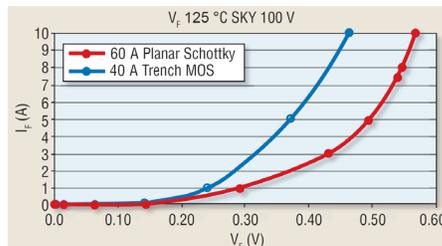
Vishay has introduced the eSMP® (enhanced Surface-Mount Power) series packages for high reliability automotive and industrial applications. The series consists of flat-type and low profile surface-mount packages with enlarged cathode pad designs that enable maximized power ratings - a perfect solution for downsizing.

Vishay has also introduced patented TMBS® (Trench MOS Barrier Schottky) die technology, which offers much lower V_F and soft high-speed switching performance, in the eSMP® series packages. This combination provides the industry's best Schottky rectifier diode performance to meet application design requirements.

TMBS® Diodes Features

Compared to conventional planar Schottky diodes, Vishay TMBS® chip designs provide improved system efficiency advantages:

- Low switching loss
- Low forward voltage drop
- High power density
- High reverse voltage up to 150 V / 200 V
- T_J max up to 175 °C
- AEC-Q101 qualified available



The table below lists the TMBS® products available in the eSMP® series packages

eSMP® Package	$I_{F(AV)}$	Rev. Voltage	T_J max.	Circuit Configurations	AEC-Q101 Qualified	TMBS® in eSMP® Products Series
MicroSMP (DO-219AC)	1 A to 2 A	45 V to 60 V	150 °C	Single	Yes	VxPL45 Series, VxP6 Series
	1 A to 2 A	100 V to 150 V	175 °C	Single	Yes	V1PMxx Series, V2PMxx Series
SMF (DO-219AB)	1 A to 3 A	45 V to 60 V	150 °C	Single	Yes	VxFL45 Series, VxF6 Series
	1 A to 3 A	100 V to 150 V	175 °C	Single	Yes	V1FMxx Series, V2FMxx Series, V3FMxx Series
SMP (DO-220AA)	3 A	60 V	150 °C	Single	Yes	V3P6
SlimSMA (DO-221AC)	3 A to 5 A	45 V to 150 V	150 °C	Single	Yes (except 50 V)	VSSAFxL45 Series, VSSAFxN50 Series, VSSAF5xx Series
	3 A to 5 A	60 V to 150 V	175 °C	Single	Yes	VSSAF3Mxx Series, VSSAF5Mxx Series
SMPA (DO-221BC)	3 A to 8 A	45 V to 150 V	150 °C	Single	Yes (except 50 V)	VxPAL45 Series, VxPAN50 Series, V8PAxx Series
	8 A	100 V to 120 V	175 °C	Single	Yes	V8PAMxx Series
SMPC (TO-277A)	8 A to 25 A	45 V to 200 V	150 °C	Single	No	V8PL6, V10PL45, V25PN60, VxP20 Series, VxxP45S Series, VxxPN50 Series, VxxPL50 Series, VxxPL60 Series
	8 A to 25 A	45 V to 150 V	150 °C	Single	Yes	V8Pxx Series, V8PMxx Series, V10Pxx Series, V10PMxx Series, V12Pxx Series, V12PMxx Series, V15Pxx Series, V15PMxx Series
	8 A	100 V	175 °C	Single	Yes	V8PM10S
SlimDPAK (TO-252AE)	20 A to 35 A	45 V to 150 V	150 °C	Single	Yes	V20PWxx Series, V35PWxx Series
	20 A to 35 A	45 V to 150 V	175 °C	Single	Yes	V20PWMxx Series, V35PWMxx Series
	20 A to 40 A	45 V to 150 V	150 °C	Common cathode	Yes	V20PWxxC Series, V40PWxxC Series
	20 A to 40 A	45 V to 150 V	175 °C	Common cathode	Yes	V20PWMxxC Series, V40PWMxxC Series
SMPD (TO-263AC)	20 A to 40 A	45 V	200 °C (forward only)	Single	No	VxxDL45BP Series
	20 A to 40 A	45 V	150 °C	Single	Yes	VxxDL45 Series
	20 A to 35 A	120 V	175 °C	Single	Yes	VxxDM120 Series
	10 A to 60 A	45 V to 120 V	150 °C	Common cathode	Yes	V10DxxC Series, V20DxxC Series, V30DxxC Series, V40DxxC Series, V60DxxC Series
	10 A to 60 A	45 V to 200 V	175 °C	Common cathode	Yes	VxxD202C Series, V10DMxxC Series, V20DMxxC Series, V30DMxxC Series, V40DMxxC Series, V60DMxxC Series